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On Behalf of

The City of Philadelphia and
The National Association for Clean Water Agencies
(NACWA)

U.S. House of Representatives
Transportation and Infrastructure Committee

Subcommittee
on
Water Resources and Environment

March 19, 2009

Good morning, Chairwoman Johnson, Ranking Member Boozman, and members of the committee. My name is Howard Neukrug, and I am the director of the Office of Watersheds for the City of Philadelphia Water Department (PWD). I am honored to be here today to testify on behalf of my water utility, the City of Philadelphia and the National Association of Clean Water Agencies (NACWA), which represents the interests of municipal wastewater treatment agencies throughout the nation.

Opening Statement

Let me begin by getting right to the point: it is time for the Clean Water Act to acknowledge the linkage between land use and water resource protection and to set cities on a course towards a sustainable future. If we are going to rebuild the drainage systems of America's cities in order to harvest rain water and prevent stormwater from commingling with sanitary sewage in the first place, then the law needs to be revised to recognize the significant impacts land use policies have on local water quality.

Congress should direct the U.S. Environmental Protection Agency (EPA) to revise its 1994 Combined Sewer Overflow (CSO) Control Policy to require municipalities to adopt stormwater regulations and to encourage the use of green infrastructure solutions to water management.

We believe that it is incumbent upon EPA to develop ways to incorporate these ideas into their regulatory and enforcement framework. When cities invest in green infrastructure and other innovative, cost-saving strategies to manage their stormwater, they need to know they're going to get credit for it. There clearly is a better use for our money, such as the green programs being implemented in Philadelphia, that provide the model for a wise investment in a 21st century infrastructure. The rest of my testimony will clarify these points and, I hope, gain your support for this exciting vision that we have embraced for Philadelphia.

The Greenest City in America

A hallmark challenge of Philadelphia Mayor Michael Nutter's administration is to make Philadelphia "the Greenest City in America." He has created a new cabinet-level Office of Sustainability and a Sustainability Advisory Board representing public, private, and nonprofit interests from across our metropolitan area. In April, we will be launching our ambitious action plan to reduce our exposure to rising energy prices, limit our environmental footprint, and reposition our workforce and economic development strategies to leverage our enormous competitive advantages in the emerging green economy. The effort is being described as "strengthening our economy by reducing our environmental footprint."

As we finalize our strategy on how to become the Greenest City in America, it has become clear that a critical link must be forged to connect the Clean Water Act and its goals with those of sustainable 21st century cities. Two hundred years ago, Philadelphia became famous for many things, one of which was our water system and another, its Greene Country Towne. It is with great pride that I can say that we are now returning to our forebears' understanding of the connection between a green city and clean water.

Green Cities – Clean Waters

Philadelphia's declaration that it will be the greenest city in America is an energizing call to action for the PWD. As the department charged with ensuring optimal compliance with Philadelphia's federal CWA permit, we are striving to define an infrastructure management program that protects and enhances our region's waterways by managing stormwater runoff in a way that significantly reduces our reliance on increasing underground infrastructure. Like other major cities, we have enough fiscal concerns with maintaining the system we have, without having to actually increase its capacity.

Over the past year we have crafted a vision that focuses on the treatment of publicly-owned land, such as city properties, streets and right-of-ways that constitute 45 percent of the impervious land area of the city. This sustainable, environmentally beneficial treatment is known as green infrastructure and modifies the relationship between land and stormwater.

The goal of our green infrastructure program is to reduce the amount of stormwater runoff from the city's built environment by creating urban landscapes and streetscapes that also perform as stormwater infrastructure. We look at our city's streets with an eye that seeks sometimes modest and sometimes grand opportunities to peel back the existing concrete and asphalt to recreate a green element that welcomes the rain – storing, draining and cleaning it. Ideally, when we complete a public land transformation, the new green infrastructure will manage the first one inch of rainfall that would normally flow along its street gutters and into its storm drains within the targeted drainage area. Our focus is on creating new standards of sustainable urban design that will guide the development and redevelopment of American cities in the 21st century.

To that end, we firmly believe that money spent on stormwater management and the attainment of CWA goals should also represent money spent to improve the natural resources of the city and to enhance the community, while guiding us to new standards in sustainable urban design. This is why we are working to incorporate a Green Cities – Clean Waters approach into the larger citywide sustainability policy to address not only water resources issues, but to also address other environmental issues such as air quality, waste product reuse, urban heat island mitigation, carbon sequestration, and energy conservation.

Green Build Partnerships

However, we cannot implement a green infrastructure program in a vacuum. Retrofitting a street or public facility is certainly more costly than building new infrastructure as a component of a complete renewal project. For PWD to solely focus on retrofit opportunities, our limited funding will be poorly invested. We believe the ideal is a true citywide partnership, one that would result in an incredibly innovative, cost-effective, and transforming incremental approach to how city departments revitalize neighborhoods to make them healthier and more sustainable places in our little corner of the biosphere. Philadelphia's Sustainability Framework will be the key to focusing the water utility green infrastructure programs with the standards, protocols and building practices of other city departments and agencies.

And this new approach for a water and wastewater utility to fully embrace its water and land environment has received recognition, praise and support from our friends in the environmental and regulator communities. As just one example, in 2007, the Pennsylvania Resources Council, Inc., a

nonprofit organization formed with the goal of promoting the conservation of natural resources and protection of scenic beauty, bestowed its Leader in Sustainable Design and Development award on the Philadelphia Water Department for its innovative efforts in the area of effective and sustainable solutions to stormwater management.

In addition, the EPA has been a tremendous supporter of the efforts of NACWA, the Philadelphia Water Department, and other water sector utilities. We are working together to identify the mechanisms and policies needed to fully embrace the Green Cities – Clean Waters approach into the regulations and policies that are under the legislative umbrella of the Clean Water Act.

Needed: A 21st Century Sustainable Cities Interpretation of the CWA

With this little bit of background, I'd like to take this opportunity to seek your help.

Every day as my colleagues in other cities and I approach this new paradigm between clean water and the 21st century sustainable city, we are under the challenge to make these programs work within a 20th century interpretation of the goals of the Clean Water Act, which acknowledges the benefits and costs and risks of only one part of our environment – water. While this may seem very logical – after all it is the Clean Water Act and I am here representing the water and wastewater utility sector – the new solutions to our urban and environmental challenges are, as I stated above, incredibly linked to other environmental, ecological, and financial realities.

In Philadelphia and other cities, mayors and directors of local clean water utilities are working on solutions that embrace a more holistic approach to watershed management and stormwater control by employing non-traditional, "green infrastructure" approaches to limit, and eventually reverse, the negative impacts of past stormwater management practices. Yet these approaches, while encouraged by EPA, are simultaneously made difficult-to-impossible to implement by current regulatory practices which apply standards of construction scheduling and water quality goals that are unachievable using a green infrastructure approach.

This brings utility managers across the country back to hard, gray, single-goal oriented infrastructure as the only solution to their regulatory and consent ordered environmental programs. Like it or not, the reality is that implementing a sustainable approach takes a lot of time. It took 150 years of sewer construction to create the conditions that now exist; it will take 30 to 40 years to evolve our cities into fully sustainable, green urban centers for the 21st century.

So, despite the good wishes of our many friends at EPA, the state regulators, mayors, governors, Congress, and environmental advocacy groups, we remain burdened with doubt about the future of our programs by a sometimes myopic interpretation of how to achieve the goals of the Clean Water Act.

Stepping Back: From the 19th Century to Modern Day CWA

Our 19th and 20th century solution to stormwater management was designed to remove water from the urban environment quickly and safely, not to protect our water resources. The solution was to build a network of drainage pipes to move rainwater, along with other industrial, household and

human wastes, away from homes, streets and businesses for disposal into our rivers, lakes, streams and estuaries.

The CWA moved to address surface water protection by promoting significant national and local investment to capture and treat this piped waste before it entered our waterways. It has been extremely successful in controlling the release of wastewater during dry weather, but has had less success in controlling the increased volume of wastewater plus stormwater resulting from wet weather events. During heavy storms, the amount of water to be collected and treated greatly exceeds the capacity of our pipes and treatment plants. Thus, when it rains in many U.S. cities, rainwater and sewage overflow, adding pollutants mixed with storm run-off into our waterways. These are what we call combined sewer overflows or CSOs.

This problem has been exacerbated by the expansion of our cities, suburbs, and even the development of our rural areas. As more green space is paved over, the ability of the land to absorb rainwater is diminished, causing more water to be carried to already overburdened networks of pipes. Changing climatic conditions – especially changes in the intensity and frequency of rain events – also contribute to increased stormwater discharges, and combined sewer overflow events.

And perhaps most troubling is that, as a result of suburban development and poor stormwater management requirements, and despite great progress and huge expenditures by cities like Philadelphia to solve its CSO problem, at the end of the day, we will still have a polluted river.

National Pollutant Discharge Elimination System Permits

The primary vehicle for regulating stormwater, the National Pollutant Discharge Elimination System (NPDES) program under the Clean Water Act, was designed as the means for reducing the amount of pollutants entering our rivers, lakes, streams, and estuaries from municipal and industrial wastewater. In addition to establishing this federal NPDES permit program, the CWA authorized significant funding in the form of grants to help municipalities build and/or upgrade their existing wastewater facilities to meet secondary treatment standards. This program was an enormous success, and we still see its benefits today, even as we witness the steady decline of the federal government's financial commitment to clean water.

While managing stormwater is a basic service, it is also a huge challenge for most local government entities. Despite our best efforts and the best intentions of Congress and USEPA, municipalities still face myriad obstacles in curbing the impacts of stormwater in order to meet our water quality goals. First and foremost is the lack of adequate funding to upgrade our infrastructure sufficiently to meet stormwater requirements and other regulatory mandates.[1] As NACWA and others have testified before in this committee, our stormwater and wastewater infrastructure is old and crumbling and in desperate need of additional funding to finance its upkeep and rehabilitation.

[1] EPA, the Government Accountability Office (GAO), and the Water Infrastructure Network (WIN) estimate a $350-$500 billion funding gap for wastewater infrastructure over the next 20 years.

Meanwhile, the population continues to grow right along with the number of regulatory requirements imposed upon municipalities. Contaminants of emerging concern, nutrient controls, and the challenges associated with climate change place new burdens on our struggling communities. Climate change, in particular, could impose significant challenges, particularly if the result is more intense and more frequent storms taxing overburdened wastewater collection and treatment systems. Simply put, yesterday's sewer systems were not designed to handle today's challenges and an ever expanding set of regulatory requirements.

The National CSO Policy Does Not Encourage Green Solutions

In the early 1990s, EPA conducted a national advisory committee process that resulted in the development of the National CSO Policy. The goal for this process was to respect and account for the decade's worth of experience of EPA's stakeholders, resulting in a consensus approach to what, at the time, was regarded as the most reasonable means to solve the nation's CSO problems. However, as is the case for all such planning, the policy is a product of its time — a time which had only recently focused billions of dollars on facility and infrastructure improvements aimed to modernize wastewater treatment and minimize the impacts of point source pollution to our rivers and streams. This point source approach was extremely successful as we have witnessed with the increasing numbers of fish species in our rivers. But its success resulted in the need to address "that other pollutant" – uncontrolled stormwater. And the tools and methods that were instrumental in substantially eliminating point source pollution were not, and could not, be effective in the new challenge of managing stormwater.

Today I think we – environmentalists, engineers and the regulated and regulator communities — would all agree that stormwater management is most efficient and environmentally sound when the strategies that mimic nature are used – strategies that recognize that stormwater is a natural resource, a critical component of the hydrologic cycle that irrigates the earth and recharges our groundwater supplies as was nature's intention. Green infrastructure uses nature's designs and transforms trees, vegetation, and soil (when combined with manmade features) into the ultimate stormwater management systems. These GI innovations have happened only over the last 10 years in the United States. The stakeholders who helped develop the CSO Policy of the 90s could have not foreseen the initial gentle adoption and subsequent, full-blown enthusiasm for low-impact development techniques that pioneering cities employed to protect and restore their streams. But this would be the case for any specialty and the technologies that advance them. All policies should have the built-in capability to be revised and renewed based upon new, life-altering information and technologies.

The existing CSO policy, formed around the expectations that traditional, or "gray" infrastructure approaches, would be the preferred pathway to stormwater (combined sewage) control, must be flexible enough to allow revisions that reflect our new understanding about green infrastructure and other alternative strategies for addressing this growing water quality challenge. A surgeon would not use the tools or methods developed 10 years ago if they wished the best success for their patient. Utilities should demand, and be given, the opportunity to use the most cost effective, environmentally beneficial and rational solutions that are available to it to meet its Clean Water Act requirements – and the desires of its citizens who are shouldering the burden of these improvements.

Philadelphia is committed to meeting the goals of the CSO Policy, but it is also primed to meet these goals with the wealth of strategies that green infrastructure and traditional systems can offer. Our plea: do not demand that Philadelphia, or other cities that are passionate about watershed protection, as evidenced by our own 10 year focus on regional watershed protection solutions, settle for traditional solutions. These solutions can only be implemented through the construction and operation of massive tunnels and tanks, intended to store combined stormwater and sanitary sewage for later pumping and treatment. Enable us to do even better for our environment by blending the natural and traditional technologies that – in the end – will work the best while delivering multiple benefits.

In addition to concerns over capital financing for these gray systems and their inability to truly restore our waterways, the long-term operation and maintenance and energy required to de-water these systems after each storm make this approach unsustainable. These traditional approaches to stormwater and combined sewage management embody a never-ending requirement for the consumption of vast amounts of electrical power with the intent that the stormwater will be pumped and treated forever.

This traditional or gray infrastructure approach to stormwater management that the policy encourages also creates artificial, and often irreversible, boundaries to nature's water cycle – reducing groundwater infiltration (and thus groundwater tables and stream flows) as well as habitat and vegetation (and thus the natural conditions of transpiration and evaporation).

Perhaps the most important result of the policy's encouragement of gray approaches is that it has a pre-defined end-point that the system was designed to achieve. The system will never provide benefits beyond that end-point. When our cities are required to build a large, gray project for stormwater control under the policy, typically they are required to do so to their limit of affordability. This leads to the city spending all available resources on a project that will bring about a static water quality control result (often recognized as a condition of four-to-six uncontrolled overflows in a year that experiences average precipitation conditions). When the project is completed and the money is spent, the controlled condition will continue to persist (e.g., 4-6 overflows per typical year).

Absent some new initiative and some new source of funds, the area's now "protected" waterways will never improve beyond that condition. And, at the end of the day, we will still have a river that does not meet water quality standards because of the number of uncontrolled issues involving stormwater management.

However, when communities adopt green infrastructure regulations and design standards on redevelopment and capital investment that force the control of stormwater at the source, the water quality of the area's receiving waters improve with each new building project in the city. Over time, the improvements derived from a green approach to stormwater control eclipse those of gray approaches, and eventually they will lead to the virtual elimination of the problem of stormwater pollution in our urban areas.

It is evident that much of what I discuss here is understood by and being debated at EPA and elsewhere within and among agencies of the federal government. There are those sections of the agencies whose responsibility it is to enforce the CWA and the policy as they are now written, which does not readily encourage the use of comprehensive, sustainable solutions based on green stormwater infrastructure. However, others in the agencies are trying to encourage the incorporation of green stormwater infrastructure into the water planning process and to evolve new, forward-looking NPDES permits for U.S. cities[2].

Expansion of the traditional systems of gray infrastructure is not the sustainable approach to developing water quality solutions for the future. Simply put, yesterday's sewer systems were not designed to handle today's challenges and the ever-expanding regulatory regime, nor, more importantly, are they equipped to mimic natural stormwater management principles essential for true environmental restoration.

And isn't that what this is all about? Caring for our streams so that they are clean and thriving and beautiful again?

NRC Report Urges Changes to our Approach to Urban Stormwater Management

Just last fall, the National Research Council (NRC) issued a report, *Urban Stormwater Management in the United States* [3], reviewing the Phase I and Phase II stormwater programs, addressing the challenges municipalities face in managing their stormwater, and recommending options for USEPA to consider. Among other things, the report cited a number of problems and inefficiencies with the stormwater program that badly need to be corrected in order for there to be noticeable improvements to the quality of our nation's waterways.

The NRC attributes these shortcomings in large measure to the fact that federal regulatory requirements have only been in place for about 20 years even though stormwater runoff has long been seen as a key source of water quality impairment. Laws mandating better stormwater control are often incomplete or conflict with state and local rules programs focused primarily on the flood control aspects of stormwater management. A more effective and holistic approach recommended by NRC for regulating stormwater discharges would include direct controls on land use, limits on the quantity and quality of stormwater runoff into surface waters, and rigorous monitoring of adjacent waterbodies. Moreover, EPA should focus on green infrastructure strategies that reduce impervious surfaces and stormwater flow volume.

We agree with the NRC's findings that "significant changes to the current regulatory program are necessary to provide meaningful regulation of stormwater dischargers in the future." In particular, the NRC goes further and embraces a strategy advocated by NACWA and being studied by

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[2] EPA , *Use of Green Infrastructure in NPDES Permits and Enforcement*, joint Memorandum from the EPA Water Permits Division and Water Enforcement Division, August 16, 2007; and, *Green Infrastructure Statement of Intent*, EPA, NACWA, NRDC, LIDC and ASIWPCA, April 19, 2007

[3] National Research Council. *Urban Stormwater Management in the United States.* The National Academies Press, Washington, D.C., October 2008. po (http://www.epa.gov/npdes/pubs/nrc_stormwaterreport.pdf)

Philadelphia and other cities – watershed-based permitting. "[T]he most likely way to halt and reverse damage to waterbodies is through a substantial departure from the status quo – namely a watershed permitting structure that bases all stormwater and other wastewater discharge permits on watershed boundaries instead of political boundaries. Watershed-based permitting is not a new concept, but it has been attempted in only a few communities."

The Philadelphia Experience

As I have already indicated in my testimony, Philadelphia is one such community that is working – on a voluntary basis – to implement some of the innovative approaches identified in the NRC report and discussed among policy makers and the best minds in the country who are studying the future of clean water policy.

Philadelphia's stormwater management program has been developed to include the right mix of infrastructure-heavy solutions, such as the construction of storage tanks with a strong commitment to green infrastructure solutions to provide control of stormwater at it sources. This allows the department to minimize the size of underground infrastructure and provide maximum benefits to Philadelphia's waterways and to the community where construction is taking place. These programs have been fully integrated into a watershed management-based approach that uses land, waterway, infrastructure, and sustainability practices to support policies and programs targeted to protect Philadelphia's drinking water supply and ensure the protection of fish and wildlife habitat. Whether it is through tree trenches, street/sidewalk planters, bioswales, rain gardens, porous pavement, green roofs, living walls or infiltration beds, these technologies maximize the benefits and re-use of rainwater. Nature has always provided the premier stormwater management benchmark; the Philadelphia Water Department is seeking to utilize green infrastructure practices to recreate those natural stormwater management benefits lost to urbanization.

These programs seamlessly complement the goals of the City's GreenPlan Philadelphia initiative, which recognizes the necessity of sustainable green space and its positive impact on air quality, public health, and stormwater management.

Philadelphia's green stormwater infrastructure approaches include:

- Some of the nation's strongest stormwater regulations, that require developers to return land parcels to a condition much closer to how nature intended. This reduces the collective costs for managing stormwater in Philadelphia.
- A "cost of service" stormwater charge which encourages land owners to use their properties in a sustainable manner—using pervious pavement in parking lots, carving out green space on the site, or planting trees, for example—or pay more for the privilege of the city collecting their rain water for them.
- Encouraging developers and property owners to use green infrastructure approaches like green roofs to meet their stormwater requirements. This guidance already has made Philadelphia # 2 in the nation's race to construct green roofs, behind our friendly rival Chicago, and nearly all of them have been created by the private sector.
- A first-in-the-nation urban wetlands registry to help developers identify sites for remediation as a trade-off for water takings or wetland losses due to construction activities. This encourages the re-development of our industrialized riverfront properties by expediting an

often arduous process with Federal agencies for wetlands protection. In addition, we have developed an evaluative tool to allow mitigation funds to be used to improve urban streams and wetlands in areas of the city often overlooked and under funded for such activities.
- Best-in-nation regional and statewide partnerships to manage our water resources. We are working together with our up-state and out-of-state partners to limit the impact our individual plans and actions can have on the greater environment.

The innovations in Philadelphia are just a few examples of how municipalities are demonstrating leadership on this critical issue. Other NACWA member agencies across the country have likewise stepped up to the plate with environmentally sustainable programs aimed at reducing the amount of stormwater entering storm drains and overtaxing our systems. A few examples include:

- Portland, Oregon, has created nearly 500 blocks of green streets, using vegetated curb extensions or street-side planters that collect stormwater runoff from streets, and is a leader in building eco-roofs to absorb stormwater and reduce the heat-island effect;
- In Milwaukee's Green Seams program, more than 1,600 acres of land have been purchased along area streams and shorelines, including wetlands, that will be preserved and serve to protect water by providing the ability to store rain and melting snow;
- Cities, such as Chicago, St. Louis, and Kansas City are employing the use of wetlands as storage areas for stormwater that also provide valuable habitat for migrating birds and wildlife.

These examples represent a growing trend among U.S. cities that are trying to get ahead of the curve in applying innovative green infrastructure approaches to address their water quality and other environmental issues. NACWA is working to support those efforts through a number of initiatives and collaborations with the goal of ensuring that our public member agencies can continue to ensure clean and safe water for generations to come.

NACWA's Efforts in Support of Green Infrastructure Solutions

NACWA was proud to join USEPA, the Natural Resources Defense Council (NRDC), American Rivers, and the Low-Impact Development Center on Earth Day in 2007 in signing a *Statement of Intent on Green Infrastructure* , which calls for "a collaborative effort among the signatory organizations in order to promote the benefits of using green infrastructure," and outlines a number of steps to be taken in this regard such as development of models for all components of green infrastructure and exploring regulatory incentives for the use of green infrastructure. NACWA has also been working with USEPA on a strategy for utilizing green infrastructure as a way to reduce stormwater and sewer overflows.

The association also joined with NRDC, American Rivers, and other groups in advocating for the inclusion of a set aside for green infrastructure projects in the *American Recovery and Reinvestment Act* (H.R. 1). We are also working with this coalition on a legislative proposal to establish a national pilot program to promote green infrastructure approaches to managing stormwater by providing incentives to more communities. And, NACWA is working with The Conservation Fund on a pilot course, *How Green is My Infrastructure? A Regional Approach to Municipal Planning and Investment,* to be held in Shepherdstown, W. Va., in April. This course offers strategies on implementation of green infrastructure specifically designed for public utility managers and officials, with an emphasis on how

utilities can initiate, fund, construct, and maintain green infrastructure projects and address their water supply and water quality needs.

Finally, recognizing the need to create a high-level forum to look at water holistically, NACWA recently founded the Clean Water America Alliance (Alliance), of which I am a board member. The Alliance is an organization whose mission is to explore the complex issue of water sustainability and advance holistic, watershed-based approaches to water quality and quantity challenges. With visionary leadership that embraces innovation, the Alliance promotes the concept that water is water, and we as nation need to consider the management of water resources on a holistic basis with a focus on the nation's urban centers. The Alliance will set the tone and be the catalyst for developing and implementing an integrated national water policy to address the interconnected water quality and quantity challenges before us, including stormwater, and help promote and advance environmentally sustainable communities.

As the competition for limited natural resources, especially for water, grows, we must be mindful of the need to shift the paradigm for how we managed these precious assets. The Alliance brings together some of the best minds in the water community, including three former EPA assistant administrators, as well as industry, engineering, environmental/conservation, academic, utility, and local and state leaders who will help us formulate 21st century solutions for moving forward in a smarter, more holistic fashion.

NACWA is also working to advance this holistic thinking through its Watershed Task Force, which is in the process of drafting a 21st Century Watershed Act. While we recognize and applaud the significant improvements made in water quality in the last 36 years, we have reached a plateau—or should I say we are treading water — in terms of what we can achieve unless we start to think differently about how we manage our precious water resources.

Finally, NACWA is actively engaged in efforts to promote the establishment of a Clean Water Trust Fund to assist municipalities in meeting their clean water goals, including support for green infrastructure and water-based approaches. We very much appreciate the support of this subcommittee and the full T&I Committee in working with us to help make a trust fund, similar to what's available for airports and highways, a reality and stand ready to assist you in any way to attain this vital objective.

Recommendations

To summarize, I cannot over-emphasize the importance of updating the Clean Water Act to acknowledge the linkage between land use and water resource protection and to set cities on a course towards a sustainable future. This effort should include revisions to the CSO policy and how it is applied.

A not so obvious result of the way in which the policy is currently applied for CSO control is that if cities are forced to do any substantial amount of gray, it actually makes the implementation of a green approach impossible. In short, forcing expenditures on any significant amount of gray infrastructure into a CSO control program causes the program to become too expensive to afford keeping the green approaches in the mix.

If allowed, the efforts of NACWA, Philadelphia, and other cities to promote innovative solutions and take a more holistic view of water resource management will result in significantly greater environmental benefits than the current approaches. As currently enforced, however, cities with CSO control programs are faced with three unsatisfactory choices:

- Adding some green infrastructure to a full program of gray infrastructure resulting in costs far above the affordability limit;
- Abandoning the green approach to meet current regulations, thus losing significant environmental and social benefits to meet the overflow targets;
- Going with the green approach with the risk that the regulator communities will not accept your green, sustainable approach to water management based on their interpretation of what is an acceptable CWA CSO Control Program.

Cities across America are committed to spend up to their affordability limits to solve this significant pollution issue. The question then becomes how to balance a positive, proactive program to reduce sewage overflows to rivers and streams, while making the most of this opportunity to move our cities and towns forward to be more green and sustainable.

To promote the sustainable, green approach, EPA needs to revise the National CSO Control Policy to require municipalities to adopt stormwater regulations and to encourage the use of green infrastructure solutions to water management. If they don't, it is up to Congress to amend the CWA to legislate this outcome. At any rate, when the CWA is reauthorized, it should not incorporate the Policy until it has been changed to allow and encourage the use of green solutions.

We believe that it is incumbent upon EPA to develop ways to incorporate these ideas into their regulatory and enforcement framework. When cities invest in green infrastructure and other innovative, cost-saving strategies to manage their stormwater, they need to know they're going to get credit for it. There clearly is a better use for our money, such as the green programs being implemented in Philadelphia to provide the model for a wise investment in a 21st century infrastructure.

Congress should:

- Recognize that the Clean Water Act does not fully address the needs of 21st century urban waterways. A fundamental shift in how we view and manage the urban landscape is needed.
- Clarify its desire for utilities to implement watershed based, green infrastructure solutions to stormwater management. This will require the acceptance of the innovative nature of these approaches and the ability to apply adaptive management approaches to their implementation.
- Direct the EPA to reconsider how the CSO Policy is applied to provide flexibility that will allow cities to evolve to green, sustainable urban centers. Strict overflow targets must be balanced against the impacts of other impairments. An integrated solution that uses Triple Bottom Line accounting (to balance ecology, social and financial needs) would favor solutions that address open space, habitat restoration, and other approaches that will achieve the best environmental result for the dollars spent and, ultimately, best meet the CWA.

- Recognize that stormwater control solutions can and should address more than a simple reduction in intermittent pollutant loads, but can be structured to improve the triple bottom line i.e., air quality, aquatic habitat, human health and the urban living environment.

Congress should be aware that NACWA and its partners are working on language for new environmental legislation called the *21st Century Watershed Act*. This legislation will allow us to address these ongoing water quality challenges on a more holistic basis.

Congress and EPA should also support more money for research to help us measure the effectiveness of non-traditional techniques but also provide funds needed by cash-strapped communities to implement an effective stormwater control program as called for in the NRC report. Congress should also support long-term, sustainable funding for our clean water infrastructure through a Clean Water Trust Fund.

The opportunities and the benefits of green stormwater programs are too great, and the potential for failure and an unsustainable future for our urban centers is too unacceptable for us to fail to act. We need your help to frame policy and enforcement strategies that meet the goals of the CWA through implementation of green and sustainable cities.

Madam Chair, we look forward to working with you and the other members of Congress on accomplishing these important goals. Thank you very much, and I will be happy to take any questions.